APPENDIX A.

IN THE UNITED STATES COURT OF APPEALS

For the Seventh Circuit.

No. 14227. September Term 1963 January Session 1964

JOHNSON & JOHNSON,
Plaintiff-Appellee,
v.
THE KENDALL COMPANY,
Defendant-Appellant.

Appeal from the United States District Court for the Northern District of Illinois, Eastern Division.

January 22, 1964.*

Before DUFFY, SCHNACKENBERG and SWYGERT, *Circuit Judges.*

DUFFY, *Circuit Judge.* This is a suit charging infringement of Gross Patent No. 2,703,083, relating to an "Adhesive Bandage." It was issued to plaintiff on March 1, 1955 as a continuation-in-part of earlier abandoned applications of Shelley and Gross filed respectively on June 25, 1953 and September 25, 1953. The complaint charging defendant with infringement was filed the same day the patent was issued.

Plaintiff, Johnson & Johnson, is a major producer of adhesive products including adhesive tape and adhesive bandages. The trademark of plaintiff's adhesive bandage is "BAND-AID." Defendant's Bauer & Black division, manufactures similar products, and its adhesive bandages are sold under its trademark "CURAD."

* As amended by order of February 6, 1964.

At the time of submission to the District Court, each side submitted proposed findings of fact and conclusions of law. At a later period, the District Court filed its opinion,[1] holding product claims 1, 2, 4, 5, 8, 9, 11 and 12 of the patent in suit were valid and infringed by defendant's adhesive bandages. The Court directed plaintiff to prepare and submit findings of fact, conclusions of law and judgment order consistent with the opinion. Plaintiff re-submitted the same proposed findings and conclusions as it had theretofore submitted with the exception that the findings last submitted had the references and headings deleted. The Court adopted these findings as submitted.

Adhesive bandages have been familiar household articles for thirty or more years. They consist of a piece of pressure-sensitive adhesive tape, to the central portion of which a small pad of gauze has been affixed. The adhesive consists of a backing or backing strip coated with an adhesive substance, which substance is usually referred to as the mass.

The surface of the gauze pad is protected prior to use by overlapping facing strips which are attached to the exposed adhesive-covered portions of the backing. These protective facing strips, which are removed prior to the use of the bandage, protect not only the gauze pad, but the adhesive surface as well. The bandages are enclosed in individual envelopes in which they are sealed and sterilized.

In spite of the fact that the patent in suit is entitled "Adhesive Bandage," it is not concerned with the material of which the backing is made, nor with the formulation of the adhesive mass. It is concerned with the nature of the facing strips which are used to protect the adhesive surfaces and the gauze pad.

1. Published in 215 F. Supp. 124.

Prior to 1950, the backing strip of adhesive bandages was usually a white woven cloth which was substantially inextensible, the same as the backing strip of the surgical tape of that day. About 1951, both plaintiff and defendant began using extensible plastic strips instead of woven fabric. The bandages made from this plastic material conformed more readily to the irregularly shaped portions of the human body. Thereafter, extensible plastic backings became conventional.

Prior to about 1953, the protective removable facing strips were usually made of a loosely woven fabric called crinoline, which is a starched gauze. However, crinoline has been replaced on the commercial products of both parties to this suit by thin, smooth strips of synthetic plastic material, either in the form of thin, unsupported films, or thin films laminated to paper.

The patent in suit is concerned with that substitute of materials for facings and with the benefits which result from the use of such facings.

Certain basic requirements for a material to be used for facing strips flow from the function to be performed. One self-evident requirement is that the facing material should be readily removable from the adhesive surface when the user wishes to apply the bandage. Another such requirement is that the material be inert in the sense that it should not adversely affect the adhesive mass and other portions of the bandage with which it is in contact, especially when subjected to high heat in the process of sterilization.

As a facing material, crinoline possessed these qualities. It was chemically inert, was readily removable from the adhesive and was not expensive. There was a drawback to crinoline, however, because its rough and open-meshed texture became embedded to some extent in the adhesive surfaces to which it was applied, with the result that the adhesive surfaces, upon removal of the crinoline, were

somewhat rough. Because of this roughness, the initial contact of the adhesive mass with a portion of the body to which it was applied, involved only the high spots of the adhesive surface, and it was usually necessary to apply pressure in order to bring the full potential of the adhesive mass into play. Also, some of the crinoline's starch content sometimes transferred to the adhesive and masked portions of the adhesive surface resulting in reduction of adhesive ability of the bandage.

Both parties to this suit endeavored from time to time to find a more suitable facing material, and both looked for a material with continuous smooth surfaces.

The parties to this suit had been aware for years that the tackiness of an adhesive mass on initial contact was greatly enhanced by the use of a facing material having a surface which was smoother than crinoline.

The structural elements of an adhesive bandage are a) the backing, b) the adhesive layer covering the backing, c) the gauze pad or compress, and d) the facing which overlies the pad and adhesive to protect them until the bandage is used. Plaintiff claims the contribution made by Gross was to provide a bandage characterized by new and critical relationships between these structural elements.

The District Court found in the Gross bandage 1) the facing members have a smooth surface; 2) the facing members are in such intimate contact with the adhesive mass that they exclude air and impart to the adhesive the smooth surface characteristics of the facing members, and notwithstanding the intimacy of such contact and the conditions used to sterilize the bandage, the facing members are 3) inert with respect to the mass, and 4) releasable, that is, easily and cleanly removable from the adhesive without separating the adhesive from the backing and without impairing the smooth surface characteristics imparted to the adhesive by the facing. These relationships are described

in the Gross patent as the four basic requirements or principles of the invention.

As an illustration that both parties knew that a smoother adhesive surface which resulted from the use of a smooth-surfaced facing material, would give greater adhesiveness upon initial contact, defendant points to an industrial tape known as 281 which defendant had sold commercially beginning in 1949. This was a double surfaced tape where both sides were coated with adhesive. It was sold in roll form, a continuous smooth-surfaced strip of polyethylene film was interposed between each convolution of the tape so that when rolled under tension each of the two adhesive surfaces of the tape were firmly pressed against the interposed polyethylene facing sheet. On the unrolling of the tape and the removal of the facing sheet, the resulting smooth adhesive surfaces were possessed of superior adhesiveness on initial contact. In the testimony this was sometimes referred to as "quick-stick."

However, there is an important difference in the requirements of a facing material to be sold in roll form and adhesive tape to be incorporated into adhesive bandages. Tape sold in the form of adhesive bandages is required by law to be sterilized. The polyethylene which defendant used in the interleaved facing sheet in its 281 tape could not be used in adhesive bandages which were destined to be steam-sterilized. This material could not withstand the high temperature at which a steam-sterilization must be conducted. Thus, synthetic plastic materials which were available prior to 1951 were not satisfactory for adhesive bandages.

In 1951, du Pont developed a new synthetic plastic, technically a polyester of terephthalic acid and a dihydric alcohol such as ethylene glycol, which in fiber form became well known as Dacron. The same material in film form was sold under the du Pont trademark Mylar. This ma-

terial could withstand the high temperature involved in steam-sterilization. In September 1952, after much experimentation, plaintiff confirmed that Mylar promised the desired capabilities of surviving steam sterilization and with its lustrous film commended it for use in place of crinoline as a facing material.

In October 1952, someone in plaintiff's organization found that when he lightly laid one of the ends of an adhesive bandage which had been faced with Mylar paper laminate on a can in which adhesive bandages are usually sold, it would adhere so strongly that the can could be lifted.

In the spring of 1952, defendant found a Munising vinyl-coated facing survived steam-sterilization better than any previous material it had encountered. Using this material, it made a market test in the Chicago area in early March 1953. This was prior in time to the filing of the application for the patent in suit.

Plaintiff learned of defendant's market test. In May 1953, plaintiff came on the market with Mylar laminate facing bandages and with the knowledge that a material then available known as Kodapak IV, newly developed by Eastman Kodak Company, could also be used instead of Mylar, the latter being then in short supply. Mylar and Kodapak had in common that they were newly developed, and were capable of withstanding the high temperature involved in steam-sterilization.

In May 1953, when plaintiff first marketed its Mylar-faced bandage, defendant had not then decided to replace crinoline with a smoother facing material. At that time, plaintiff's sales of BAND-AIDS were about four times that of defendant's CURADS, and defendant was somewhat reluctant to abandon its product which had been well-advertised and much used in the past.

Thus, both parties to this suit acquired the capability of making satisfactory adhesive bandages with quick-stick

capability on a commercial basis. Plaintiff did so by obtaining access to Mylar and Kodapak IV, new materials developed by others to which plaintiff made no contribution. Defendant did so first by locating the Munising vinyl-coated paper and later, by acquiring equipment permitting low temperature gas sterilization. However, each of the parties to this suit were confronted with the practical question of whether they should adopt these new methods or to let well enough alone. The new materials were more expensive. Plaintiff's ultimate decision was greatly influenced by learning of defendant's test-marketing in Chicago. As the president of plaintiff put it, defendant's marketing "put the barr under our tails and caused us to move more rapidly than we might have otherwise."

Plaintiff's advertisements and demonstrations made wide and effective use of the can-lifting capabilities of the new BAND-AID bandages. Defendant deemed it necessary to offer to the public a product having similar can-lifting capability. In the summer of 1953, defendant followed plaintiff on the market with its steam-sterilized CURAD bandage faced with vinyl-coated paper.

Plaintiff claims that all of the defendant's accused adhesive bandages infringed claims 1, 2, 11 and 12 of the Gross patent; that defendant's vinyl-faced adhesive bandage also infringed claims 4 and 9, and that defendant's polyethylene-faced bandages also infringed claims 5 and 8. The District Court found that Gross patent claims 1, 2, 4, 5, 8, 9, 11 and 12 were infringed by defendant's adhesive bandages.

The District Court placed much reliance on the district court decision in *Johnson & Johnson* v. *C. B. Stenvall, Inc.* (S.D.N.Y.), 193 F. Supp. 128. Claims of the Gross patent in suit were in issue in that case. The Court there held that claims 1, 2, 3, 9, 11 and 12 of Gross Patent No. 2,703,083 were valid and infringed.

Defendant points out that the trial of the *Stenvall* case took less than two days, and claims that much of the pertinent prior art relied on in the instant case, which consumed nineteen trial days, was not before Judge Solomon who tried the *Stenvall* case. An appeal was taken in the *Stenvall* case, but a settlement was effected. Stenvall took out a license and the appeal was dismissed.

We think the District Court was in error in finding that defendant copied the plaintiff's patent. The patent in suit did not issue until March 1, 1955. This was nearly two years after defendant's product had been test-marketed.

Plaintiff's first smooth-faced bandages with facings of Mylar laminated to paper were marketed in May 1953. This was after some of plaintiff's officers had seen a bandage which defendant had test-marketed in the Chicago area, and in which the paper facings were impregnated with a vinyl plastic which produced a smooth surface.

Although the Mylar and Kodapak IV laminates used by plaintiff could be steam-sterilized, defendant's vinyl-coated paper was only marginal in this respect. Later, defendant replaced its vinyl-treated paper facings with an unsupported film of polyethylene which it had long used as a facing sheet in connection with its industrial adhesive tape 281. It could do this because it had installed equipment by which bandages could be sterilized by the carboxide gas process which operated at a lower temperature than sterilization by steam.

Neither plaintiff nor defendant was the first to utilize gas sterilization for adhesive bandages in the United States. Neither was first to introduce adhesive bandages having smooth continuous facings. In 1950, Cress bandages appeared on the market. These bandages had facing sheets of metal foil laminated to paper similar to wrappers for chewing gum and cigarette packages. The smooth surface of the metal foil facings smoothed the surface of the ad-

hesive portions of the bandage. Government records show shipments of Cress bandages into this country from Canada in February 1952. The testimony showed that plaintiff received some disquieting reports from their field men with reference to competition from the Cress bandages.

Bandages employing metal facings have all the attributes of the product of the Gross patent except that the Gross patent has the artificial limitation that the facing shall be of organic material. The Cress bandages were sterilized by the use of carboxide gas.

Defendant strongly urges lack of patentable invention on the basis of obviousness under Section 103. We, of course, have the right to determine whether the District Court applied the proper standard of invention. This is a matter of law reviewable by this Court. *New Products Corp.* v. *Outboard Marine & Mfg. Co.*, 7 Cir., 263 F. 2d 521, 525; *Armour & Co.* v. *Wilson & Co.*, 7 Cir., 274 F. 2d 143, 151-157.

The record clearly shows that the adoption of smooth facings in adhesive bandages awaited the development of materials such as Mylar and Kodapak IV which could withstand the high temperatures of steam sterilization, and also the development of equipment and techniques using gases such as carboxide, which made possible the sterilization of facing materials such as polyethylene at a lower temperature. Certain it is that Gross contributed nothing to either of these developments.

We think the achievement of "instantaneous adhesion" by the use of smooth facings was well known in the art and had been put to practical use by each of the parties to this suit in various of their commercial products. There was nothing unobvious, unexpected or surprising in Gross' teachings, after the log-jam had been broken by others. As was said in *Ruben Condenser Co.* v. *Aerovox Corp.*, 2 Cir., 77 F. 2d 266, 268, cert. den. 296 U. S. 623, 56 S. Ct. 145, 80

L. Ed. 443, ". . . ; if the machine or composition appears shortly after some obstacle to its creation, technical or economic, has been removed, we should scrutinize its success jealously; . . ."

In *Weston Electrical Instrument Corp.* v. *Dejur-Amsco Corp.*, 2 Cir., 133 F. 2d 778, 781, the Court considered that a portable exposure meter had been held up until the art had developed a self-generating "photo-electric cell" with enough power to move the indicating mechanism. The Court pointed out that two persons, in an interval of two or three years, thought of the expedient that was involved in that case. The Court held the patent invalid.

The case of *Glikin* v. *Smith*, 5 Cir., 269 F. 2d 641, is pertinent to the case at bar. In *Glikin*, the patent was on eyeglasses in which a hearing aid was incorporated in one of the side bows of the frame. The Court held the patent invalid, pointing out the development of transistors and other miniature components and not Smith's invention were responsible for the acceptance and commercial success of hearing-aid glasses. The Court said, 269 F. 2d at 654: "In this proceeding we see Smith as attempting to assert a patent monopoly over efficient and commercially successful hearing aid eyeglasses which owe their efficiency and success to scientific advances with which Smith had nothing to do."

It is our view that plaintiff's attempt to assert a patent monopoly over adhesive bandages which owe their efficiency, as far as "quick-stick" is concerned, to scientific advances in new facing materials and sterilizing methods with which Gross had nothing to do, is analogous to the effort of the patentee in *Glikin* v. *Smith*. We hold that the claims of the patent in suit are invalid because of lack of patentable invention.

Defendant strongly urges that the patent in suit is invalid because it attempts to differentiate the facings with

which it is concerned from those of the prior art in terms of their ability to perform their intended function, rather than by reference to the physical structure or chemical characteristics which enable them to do so. Defendant argues that several of the "basic requirements" of the alleged invention are defined in the claims in the terms of their ability to achieve the desired result rather than in terms of the physical or chemical structure by which that result is achieved.

It is well established that claim elements may not be functional at the point of alleged novelty. *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, 58 S. Ct. 899, 82 L. Ed. 1402. We consider this question raised by the defendant to be a close one. However, we rest our decision that the patent in suit is invalid on the reasons hereinbefore stated.

Defendant has also insisted that the patent, properly construed, is not infringed by its adhesive bandage. It insists that by the application of the final facing material, the surface of the mass is slightly roughened rather than smoothed by the application of the facing. Defendant argues that a smooth surface is not *imparted* to the adhesive surface by the application of the final facing, as is called for by each of the claims in suit.

In view of our holding of invalidity, we do not reach the question of infringement.

The complaint must be dismissed.

REVERSED.

APPENDIX B.

UNITED STATES COURT OF APPEALS,

For the Seventh Circuit,

Chicago 10, Illinois.

Wednesday, January 22, 1964.

Before:

Hon. F. Ryan Duffy, Circuit Judge,
Hon. Elmer J. Schnackenberg, Circuit Judge,
Hon. Luther M. Swygert, Circuit Judge.

JOHNSON & JOHNSON, *Plaintiff-Appellee*, vs. THE KENDALL COMPANY, *Defendant-Appellant*.	Appeal from the United States District Court for the Northern District of Illinois, Eastern Division.

No. 14227

This cause came on to be heard on the transcript of the record from the United States District Court for the Northern District of Illinois, Eastern Division, and was argued by counsel.

On consideration whereof, it is ordered and adjudged by this court that the judgment of the said District Court in this cause appealed from be, and the same is hereby, REVERSED, with costs, in accordance with the opinion of this court filed this day.

APPENDIX C.

Selected Pertinent Portions of the Findings of Fact Entered on March 14, 1933 by District Judge Edwin A. Robson.

IN THE UNITED STATES DISTRICT COURT,

Northern District of Illinois,

Eastern Division.

JOHNSON & JOHNSON, a corporation, *Plaintiff*,

vs.

THE KENDALL COMPANY, a corporation, *Defendant*.

No. 55 C 336

I. FINDINGS OF FACT.

The Court, having considered the pleadings, having heard the testimony of the witnesses, having examined and considered the depositions and exhibits offered and received in evidence, having considered the briefs of counsel, and having rendered its Decision on the Merits, makes the following findings of fact:

9. The general structure of an adhesive bandage comprises a backing, an adhesive layer covering the backing, an absorbent pad in the center of the backing and secured thereto by the adhesive, and protective coverings, called

facing members, removably attached to the adhesive areas and overlying the absorbent pad. Prior to the invention of the Gross patent the facing members were almost invariably composed of crinoline, which is a heavily starched and dried gauze.

11. Plaintiff admits that in an adhesive bandage the structural elements of (a) the backing component, (b) the pad or compress, and (c) the adhesive mass were old. Plaintiff also admits that a smooth facing *per se* was old. The invention disclosed and claimed in the Gross patent is not merely an aggregation of these old elements, but consists of a novel adhesive bandage characterized by a new and critical inter-relationship between its component elements wherein

(1) the facing members have a smooth surface,

(2) the facing members are in such intimate contact with the adhesive mass that they exclude air and impart to the adhesive the smooth surface characteristics of the facing members, and notwithstanding the intimacy of such contact and the conditions used to sterilize the bandage, the facing members are

(3) inert with respect to the mass and

(4) releasable, that is, easily and cleanly removable from the adhesive without separating the adhesive from the backing and without impairing the smooth surface characteristics imparted to the adhesive by the facing.

12. A successful adhesive bandage must adhere readily to the skin; it must not leave adhesive on the skin when removed; and it must be sterile. From the manufacturer's standpoint it must be capable of efficient production on high speed machines and the bandage must not delaminate when the protective facings are removed. Delamination occurs when the adhesive does not stay on the bandage backing

but strips off with the protective facing as the latter is removed (PX 1, col. 1, l. 79, to col. 2, l. 10).

13. The problems of the industry prior to the Gross invention centered on the attempt to attain these bandage requirements and especially good initial adhesion to the skin. Workers in the field prior to Gross attacked these difficulties by changing the composition of the adhesive mass. In his patent Gross pointed out, however (col. 1, ll. 62-6), that adhesive formulations "basically represent precarious compromises between interrelated, often conflicting, and sometimes mutually exclusive requirements." Thus, a highly sticky adhesive might make the facing too difficult to remove, might make removal of the bandage painful, and might leave adhesive on the skin (col. 1, ll. 69-78). The use of such a sticky adhesive also was troublesome for the manufacturer because the adhesive areas of the bandage before its complete assembly would tend to adhere to the bandage-making machinery (col. 2, ll. 1-3). One way to increase adhesion was to make the mass softer, but this often resulted in other problems for the manufacturer because the adhesive tended to flow into areas not intended to be covered, especially at the elevated temperatures necessary for sterilization (col. 2, ll. 3-10).

14. The crinoline facing which was almost universally employed in adhesive bandages prior to the Gross invention left a rough surface on the adhesive which it was commonly thought stuck better to the skin. However, the crinoline faced bandage did not have initial or instantaneous adhesion to the skin. The crinoline faced bandage would stick satisfactorily only if the consumer applied pressure for a perceptible period of time.

15. Gross solved the problem of instantaneous adhesion without reference to changes in adhesive formulations but instead by developing a bandage having the new and critical

interrelationship of components set forth in Finding No. 11 and which are more fully explained in the patent specification as follows (col. 3, l. 40, to col. 4, l. 3):

> "Firstly, the film should present a surface that is smooth and continuous. Ordinarily, this means that the film will be imperforate and also that it will exhibit a lustrous, glossy, or shiny appearance when viewed slantwise against a source of light. There are, of course, varying degrees of light reflectance, and a satisfactorily smooth film may have its surface treated in various ways known in the art so that its light reflectance is greatly reduced but its surface smoothness is not materially altered. As a rule of thumb, however, light reflectance provides a convenient test for selecting suitably smooth surfaces.
>
> "Secondly, the film should comprise an organic material that is substantially inert with respect to the mass used in forming the adhesive areas of the bandage. This means, for example, that the film should not contain substances that would react chemically with the adhesive mass, nor migratory ingredients, such as migratory plasticizers, that would migrate into the adhesive mass to a degree significantly to impair its adhesive properties.
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> "Thirdly, the film must be brought into and maintained in intimate contact with its underlying adhesive coating over substantially the entire surface thereof, the intimacy of contact being sufficient substantially to exclude air pockets and impart to the underlying adhesive coating at its interface with the facing member, the smooth surface characteristics of the film. Ordinarily, this means that during manufacture the underlying adhesive coating by suitable means is brought into such intimate relationship with the overlying film that the [former] acquires and maintains to a substantial degree a correspondingly smooth, continuous surface, with no occluded air pockets separating the surface of the film from the surface of the mass. This may be attained, for example, by suitably increasing the pressure normally applied to the facing member

as it is positioned on the bandage; or it may be attained, or still further enhanced, by the time and temperature conditions used during chemical or steam sterilization of the finished product.

"Fourthly, the film should be releasable by the particular adhesive mass selected so that when the facing member is removed, the adhesive coating will not be separated from its backing and the smooth surface characteristics of the adhesive existing at the interface prior to its removal will remain substantially unimpaired. This may be attained, for example, by treating the organic film with certain 'release agents' to reduce its adhesion by the mass; or by modifying the mass formulation to decrease its adhesion to the film; or both."

As pointed out in the Gross patent (col. 4, ll. 17-20) use of the foregoing principles "affords a highly effective means for making immediately available the maximum adhesive property of the mass used in the adhesive bandage."

16. The improvement wrought by the Gross invention was not a change in degree. The change was from a bandage which did not have instantaneous adhesion to a bandage which did have such adhesion. Gross was the first to teach the art that a smooth pressure-sensitive adhesive surface would stick better to the skin than the rough pressure-sensitive adhesive surface of the crinoline faced bandage. Gross was the first to show how this smooth adhesive surface could be obtained, namely, through the practice of the four principles of his invention. In view of the many previous unsuccessful attempts to solve the adhesion problem, Gross' accomplishment, in assembling old structural elements of an adhesive bandage in a new critical relationship to achieve instantaneous adhesion, was unobvious, unexpected, and surprising.

17. The merit of the Gross invention has been acknowledged by the industry. Plaintiff introduced the Gross band-

age commercially in the spring of 1953. Shortly thereafter substantially the entire industry, including defendant, abandoned the crinoline faced bandage and adopted the structure of the Gross bandage in spite of a substantial increase in manufacturing cost.

18. Plaintiff's adhesive bandage sales increased from about $10,500,000.00 in 1953 to about $21,000,000.00 in 1960 (PX 14, p. 2). Plaintiff's advertising expense ranged from 27.4% of sales in 1953, when the product was first introduced, to 12.1% in 1960 (PX 14, pp. 1-2). These advertising expenses are not unusual and do not account for the increasing success of the Gross bandage. Increase in plaintiff's sales is not attributable to population growth, changes in marketing practices, other patents, or the adoption in 1951 by plaintiff and defendant of a plastic backing. It is due to the fact that the Gross invention made the most fundamental and important change in adhesive bandages and solved the biggest problem, which was the failure of the bandages to stick.

21. The Gross patent was before the Honorable Gus J. Solomon in *Johnson & Johnson* v. *C. B. Stenvall, Inc.*, in the United States District Court for the Southern District of New York. On April 8, 1961, prior to the trial in the present case, Judge Solomon rendered his decision, reported at 193 F. Supp. 128, holding claims 1, 2, 3, 9, 11, and 12 of the Gross patent valid and infringed by defendant Stenvall's manufacture and sale of an adhesive bandage having a cellulose triacetate facing. The transcript of proceedings in the *Stenvall* case is in evidence in this case as Defendant's Exhibit 178, and a certified copy of Judge Solomon's decision and final judgment have been filed with this Court.

22. There are more defenses and a more extensive record in the present case than in the case before Judge

Solomon. However, a number of issues were the same in both cases and a number of prior art patents relied on by this defendant were considered and rejected by Judge Solomon. This Court has carefully studied Judge Solomon's decision and is of the opinion that under the doctrine of comity, it is persuasive in the present case, especially on the issue of validity of the Gross patent.

23. On May 23, 1961, defendant Stenvall filed a notice of appeal from Judge Solomon's final judgment to the United States Court of Appeals for the Second Circuit. After the close of the trial in the case at bar defendant Stenvall negotiated a license under the Gross patent in suit, settled its liability for past infringement, and withdrew its appeal with prejudice (PX 185, 187), plaintiff paying the Master's fees. Several customers of Stenvall have also taken licenses under the Gross patent and have agreed to pay a royalty of 2% of the manufacturer's invoice value of the bandages (PX 186, 189, 190).

24. The terms of the Stenvall settlement and of the licenses accepted by its customers are not unreasonable and, together with the earlier license taken by Parke, Davis & Company (PX 17), are all persuasive as showing acquiescence in the validity of the Gross patent.

60. Not a single reference, primary or secondary, or any combination of such references, relied on by defendant, discloses or suggests the Gross invention, namely, an adhesive bandage wherein the relationships between the adhesive mass and its facing recited in the patent must be obtained and maintained in order to achieve instantaneous adhesion.

64. No. 281 tape was an industrial adhesive tape with a polyethylene interliner which defendant began to manufacture and sell in 1948. Defendant's researcher Doyle testified that he knew all about such tape when he and Elson

filed an application (PX 18) to patent defendant's accused polyethylene faced bandage. Doyle conceded that he and Elson swore in the application that its subject matter (defendant's bandage) had not been in prior public use. By the same token, No. 281 tape was not a prior public use as to the Gross patent. There is no evidence that the four principles of the Gross invention were embodied in this product or inherently present in it. This tape has no more effect on the validity of the Gross patent than the 1951 Calvert patent (No. 2,541,498, disclosing polyethylene interlined tape) which Judge Solomon held to be non-invalidating (193 F. Supp. 128, 133).

65. Defendant's cloth and Wet-Pruf roll tapes of the 1930's (DX 142; 145), by themselves or taken together with the Ziegler-Forssell letters (DX 141, pp. 1-2), do not prove that it was known either by defendant or in the art generally that smooth adhesive surfaces have greater tack or instantaneous adhesion than rough adhesive surfaces. Defendant's Exhibit 145 is Wet-Pruf tape with a smooth plastic coated backing. Page 1 of Defendant's Exhibit 141 shows that in 1938 defendant's salesmen questioned whether the Wet-Pruf product was adhesive enough, and page 2 (DX 141) shows that this tape was more tacky but less adhesive than regular cloth backed tape because different adhesive masses were used. Nothing in the exhibits shows that the smooth backing of the rolls of Wet-Pruf tape imparted instantaneous adhesion to the adhesive. Page 32 of Defendant's Exhibit 141 advertises Wet-Pruf as sticking instantly but the advertisement does not explain whether this was due to a very sticky mass or for some other reason. Defendant's Research Director, Ziegler, testified that he observed a difference in the surface characteristics of the adhesives on rolls of cloth and Wet-Pruf tapes the first time he ever saw them, or in 1925. Defendant's Works Manager, Hoey, testified that he knew in 1937 that this tape had

instantaneous adhesion. However, the conduct of these witnesses is wholly inconsistent with their testimony. Defendant made no commercial use of any such knowledge in adhesive bandages until 1953 after plaintiff's bandages embodying the Gross invention appeared on the market. These exhibits and the testimony of defendant's witnesses concerning the Wet-Pruf tape do not show that any aspect of the Gross invention was known, recognized, or in use by others before Gross.

66. No sterilized Cress bandages were produced which were made during the time period pertinent to the validity of the Gross patent. No physical, documentary, or oral evidence was proffered as to the relationship between the components of the Cress bandage except the deposition testimony of George Fuzak, a distributor, and the trial testimony of William Haak, a distributor of first aid supplies to industrial plants.

67. Fuzak testified that in the Cress bandages the metallic foil of the facing was "face to face" or "adjacent" or in "full contact" with the adhesive, but he could not otherwise characterize that contact and he did not know what metal was used in the facing. There is considerable conflict in Haak's testimony as to whether he even examined a Cress bandage during the critical period, and he could not recall the character of the facing on the bandage.

68. Both Fuzak and Haak described the 1952 Cress bandage by saying that it was like the 1957 bandage, Defendant's Exhibit 80, but the latter bandage is in poor condition. There is evidence that the adhesive of the Cress bandage became gummy or non-sticky, often came off when the facing was removed, and was not smooth and uniform (PX 44-B).

69. In October 1952 Fuzak wrote to Industrial Tape Corporation asking for suggestions and assistance, and in his letter stated (PX 44-C):

"We have been experiencing difficulty with the adhesive compound used on our bandages. We are interested in finding a pressure sensitive adhesive that will not delaminate and will withstand grease and oil."

This is strong confirmation of the evidence of the failure of the Cress bandage.

70. Heldmann, the manufacturer of Cress bandages, in 1951 took out United States patent No. 2,544,315 for an adhesive bandage having an aluminum foil facing. The facing in the patented bandage was not inert with respect to the adhesive, since one of its described functions was to release material which would react with the adhesive to prevent it from becoming too sticky (DX 115, Item 3, col. 2, ll. 49-55). The Heldmann patent cannot be considered anticipatory and moreover indicates that Heldmann was looking in the opposite direction from Gross.

71. The weight of the evidence is that the Cress bandage was not satisfactory, and it is not shown to have been a prior use or to have embodied prior knowledge of the Gross invention.

77. Defendant listed as alleged public uses of the subject matter of the Gross patent, in addition to the products discussed in Findings Nos. 62-76, the following: Johnson & Johnson Consumer Test Continuous Facing Bandages; Johnson & Johnson and Bauer and Black crinoline-faced bandages; Johnson & Johnson Holland cloth-faced back plasters; Industrial Tape Corporation P-50 polyethylene-faced tape, Mylar thermo-setting tape, and TEXCEL cellophane tape; SCOTCH cellophane tape of Minnesota Mining & Manufacturing Company; and W. H. Brady Company and The Avery Company labels; as well as normal adhesive bandage, tape, plaster and label making practices of plaintiff, defendant, Industrial Tape Corporation, W. H. Brady Company, and The Avery Company; and chemical steriliza-

tion practices of the Sterilon Corporation. While many of these are mentioned or referred to by defendant in its brief, none is relied upon as a public use *per se*. Whether these items be considered individually or together with all of the other material cited by defendant as relating to the alleged invalidity defenses, none of them has any effect as showing anticipation or lack of invention of the Gross patent in suit.

82. Defendant's continued use of the old crinoline facing on its commercial adhesive bandages until 1953 is persuasive evidence that defendant did not learn anything of the Gross invention from the prior patents, publications, or the products allegedly in public use, including defendant's No. 281, Wet-Pruf, and Double Seal tapes or the Cress bandages, or the experimental work done by defendant's researchers, including Doyle, Bowen, and Kemp. If defendant had known of the Gross invention or if the art had in any manner been taught the Gross invention, it is incredible that defendant would have waited until after the introduction of the Gross bandage to market its own product embodying the Gross invention. Defendant's own records show that upon the advent of the Gross bandage, defendant immediately began efforts to match it (PX 15, pp. 18-20, 26, 41). The contemporary appraisal by defendant's Canadian subsidiary of the infringing product (PX 15, p. 45) is also strongly persuasive of the fact that the invention of the Gross patent was unknown to the prior art.

83. Just as the Gross invention cannot be achieved merely by the use of smooth facings in an adhesive bandage, so the use in the prior art of a smooth facing or a smooth liner against an adhesive did not mean that that adhesive would have instantaneous adhesion when the facing or liner was removed. When defendant began its change from crinoline to smooth facings on the accused bandage, contemporary reports show that various produc-

tion problems arose and various machine changes were necessary (DX 191, pp. 26-8). Similarly, when plaintiff replaced crinoline with smooth facings applied according to the Gross invention, extensive changes and adjustments were made in the machinery and increased pressure was used to apply the new facing. The Gross invention was not inherent in prior art practices or in the products in use or on sale or described in patents or publications, as is best shown by the fact that none of the workers searching for a solution to the problem of effecting instantaneous adhesion learned of the invention in the prior art practices or products but that when Gross disclosed it, the industry quickly adopted it.

84. Plaintiff's witness Henry M. Richardson correctly stated that the Gross patent taught the art for the first time an adhesive bandage

> "'wherein the maximum adhesive property of the adhesive mass is made immediately available to effect instantaneous adhesion of the bandage by imparting to the adhesive mass a smooth continuous surface through the intimate contact of the mass with an inert and releasable facing material also presenting such a surface.'"

85. The adhesive bandage claimed in the claims in issue is novel, useful, and represents the exercise of invention. It was not obvious or within the skill of the art.

86. The testimony of William J. Gross and R. E. Grosjean establishes that Gross conceived of the subject matter of the invention of the patent in suit early in 1945. Thereafter Gross, who was responsible for laboratory research in surgical adhesives, devised and followed a program designed to reduce his invention to practice. To that end Gross assigned several individuals in plaintiff's employ to evaluate suitable smooth plastic or plastic-coated facing

materials for possible use in his invention. Gross personally conducted a number of these evaluations.

87. In May 1946 Gross directed the preparation of 300 adhesive bandages utilizing a facing of parchment paper, and while these bandages were very good, the appearance of craters in some of them after sterilization convinced Gross that better intimacy of contact was required. Gross' experience with parchment paper was incorporated in a May 1946 Progress Report (PX 32, p. 28) which was circulated to plaintiff's Chicago plant. This report prompted Ernest H. Robinson, Director of Quality Control at Chicago, in June 1946 to direct a successful experiment wherein a cellulose acetate paper laminated book cover material, in contact with BAND-AID adhesive mass, was subjected to sterilizing conditions. Defendant asserts that because of this experiment, Robinson must be considered the inventor of the subject matter of the patent in suit. This contention is refuted by contemporaneous documents and by the oral testimony of plaintiff's witnesses, including Robinson himself. Gross had evaluated coated and impregnated papers, including cellulose acetate as crinoline replacement materials prior to Robinson's June 1946 experiment (PX 32, p. 33). Robinson did not initiate the inventive idea; he merely tested a specific material, already known to Gross and within Gross' broad concept, for the ability of this particular specimen to stand up under sterilizing conditions.

88. During the remainder of 1946 and throughout 1947 Gross continued his evaluations. Contemporaneously, plaintiff's research department at Chicago used H. P. Smith cellulose acetate as a facing material and successfully prepared adhesive bandage samples faced with this material on May 21 and 22, 1947 (PX 32, pp. 48-9). Fred Haney, head of plaintiff's research and development department at Chicago, in recognition of Gross' inventorship, sent samples of these May 22, 1947, adhesive bandages to Gross for his

evaluation (PX 32, p. 51). Both Robinson and Gross testified that the adhesive mass of the majority of these bandages was smooth, tacky, and exhibited good releasability. Gross also testified that these bandages were better than those of May 1946 because of their greater ability to withstand sterilization. These adhesive bandages faced with a cellulose acetate laminate embodied the teachings of the patent in suit and entitle Gross to a date for his reduction to practice of May 22, 1947, as to claims 1, 2, 9, 11 and 12 in suit.

89. This initial reduction to practice was followed in November 1947 by another successful reduction to practice in Chicago of adhesive bandages faced with cellulose acetate, these bandages also being forwarded to Gross for examination. These bandages had a smooth, glossy and very tacky mass and embodied the teachings of the Gross patent in suit. Gross detailed his reactions to these bandages in a December 10, 1947, letter to Haney (PX 32, pp. 74-5) in which he emphasized that his previous experience had shown that paper products varied considerably and that several additional factors made it necessary to proceed with caution in the use of cellulose acetate in a commercial product where even 98% or 99% success was insufficient.

90. In January 1948 Gross requested plaintiff's adhesive bandage department to produce 300 adhesive bandages (PX 32, p. 79), and in July 1948 Gross' assistant, Benjamin B. Blackford, requested the preparation of 1200 adhesive bandages (PX 32, p. 95). Bandages were made according to these requests, they were faced with Dobeckmun cellulose acetate and were sterilized. Two boxes of bandages of these January and July 1948 runs are in evidence as Defendant's Exhibits 56 and 59, respectively. Gross examined these bandages at the time of their preparation and found that the facing was in intimate contact with the adhesive mass, was inert, and was releasable. Gross'

testimony was corroborated by Blackford. These 1948 adhesive bandages embodied the teachings of the Gross patent in suit and constitute additional reductions to practice.

91. On July 9, 1948, Blackford evaluated a plasticized polyvinyl chloride unsupported smooth film which was applied to adhesive bandages as a crinoline substitute (PX 32, p. 96). The bandages were sterilized and upon removal of the film yielded a smooth, glossy mass with excellent tack. The bandages produced by Blackford were not inoperative because of plasticizer migration resulting from the presence of excessive quantities of plasticizer in the film facings as contended by defendant. The vinyl film used by Blackford contained only 35% dioctyl phthalate plasticizer, which proportion did not cause migration against an adhesive comparable to the one employed by plaintiff in 1948. These bandages faced with a free, unsupported vinyl film and made under Gross' direction, constitute a successful reduction to practice of claims 4 and 8 in suit.

92. Pursuant to Gross' memorandum of August 26, 1949 (PX 32, p. 149), with regard to the status of polyethylene coated paper, Blackford on September 2, 1949 (PX 32, p. 151), reported to Gross that interest in polyethylene film as a facing material had been revived by continuous sterilization methods then under investigation and that samples of polyethylene film had been requested for evaluation (PX 32, p. 150). During September 6 to 9, 1949, Blackford evaluated adhesive bandages faced with a polyethylene paper laminate. On September 6, 1949, Blackford requested (PX 32, p. 152), and plaintiff's adhesive bandage department prepared, 600 unsterilized adhesive bandages faced with a polyethylene paper laminate. These bandages were chemically sterilized with formaldehyde (PX 32, p. 153) and stored in the laboratory oven for more than one year. Upon removal from the oven, the samples aged at

both 100° F. and 150° F. had a smooth, glossy and very tacky adhesive mass when the facings were removed. These 1949 bandages faced with a material containing a polyethylene resin constitute a reduction to practice of claim 5 in suit.

93. The 1947 and 1948 adhesive bandage runs demonstrated to Gross the utility of his invention. The attainment of the perfect commercial embodiment, however, was delayed by the fact that the quality of facing materials was not uniform (PX 32, pp. 70, 74, 130, 134) and by the reluctance of plaintiff's merchandising department to adopt the product commercially. Gross' repeated requests in 1948 for a test to evaluate the effectiveness of his invention in the hands of the consumer were finally rewarded by a test carried out in the spring of 1949. This test confirmed Gross' opinion of the effectiveness of his invention (PX 32, p. 135). The test was carefully restricted and was at all times effectively within plaintiff's control (DX 38). It was a permissible test of the operativeness of the invention and not an invalidating public use within the meaning of the patent statute (35 U. S. C. § 102(b)). Gross never abandoned his invention, and following his reduction to practice, exercised reasonable diligence in putting his invention to commercial use.

96. Since the evidence shows that Gross was the first to conceive and the first to reduce the invention to practice, Gross is the inventor of the subject matter of the patent in suit. It is true that other personnel in plaintiff's employ assisted Gross in reducing his invention to practice, but their aid thus rendered did not elevate them to the rank of inventors or co-inventors, nor did it alter Gross' status as the sole inventor.

99. Prior to trial, defendant gave notice that it intended to rely on the following persons, employees of the Bauer

& Black division of defendant, as having prior knowledge or as having made the invention prior to Gross: Doyle, Ziegler, Bowen, Hawkes, Hoey, Kemp, Lloyd, Webber, and Foreign. Defendant produced adhesive bandages said to have been made by Doyle on December 4, 1947, but the proof respecting these bandages (DX 205, 206) is subject to the same infirmities set forth in Findings Nos. 72 to 76. There is no credible evidence from which the Court can find that any of the above persons named by defendant had knowledge of the subject matter of the patent in suit or had made the invention prior to Gross.

111. Although the June and September 1953 Shelley and Gross joint applications and the January 1955 sole Gross application disclosed the basic Gross invention, the invention is best and most comprehensively elaborated in the January 4, 1955, application. The plaintiff, as assignee of the Gross patent, is entitled to an effective filing date of June 25, 1953.

112. Defendant attributes the Gross invention to Sellers and Blackford, who filed an application on March 27, 1953, disclosing an adhesive bandage with Mylar as the facing material. This application and the Shelley and Gross June 1953 application disclosed the basic Gross invention in virtually identical terms. In neither application, however, was the invention adequately claimed. The Sellers and Blackford application claimed only Mylar (high molecular weight polyester) facings, while the June 1953 application claimed only cellulose acetate facings. The fact that Sellers and Blackford were named in a patent application was due to a mistake on the part of plaintiff's patent solicitors. The record shows that Sellers and Blackford were working under Gross' direction and that their only contribution was their discovery that a particular material, Mylar, was suitable for the practice of the invention previously made by Gross.

APPENDIX D.

Opinion Rendered on April 8, 1961 by District Judge Gus J. Solomon.

UNITED STATES DISTRICT COURT,

Southern District of New York.

JOHNSON & JOHNSON, a corporation, *Plaintiff*, v. C. B. STENVALL, INC., a corporation, *Defendant*,	Civil Action No. 99-94 Opinion April 8, 1961

SOLOMON, *Judge:*

Plaintiff, Johnson & Johnson, filed an action for damages and an injunction against defendant C. B. Stenvall, Inc., claiming that defendant, by manufacturing and selling an adhesive bandage is infringing plaintiff's patent No. 2,703,083.

Defendant denies both validity and infringement. At the trial, it appeared that the accused bandage, although inferior to the patented one, was practically identical to it, and I therefore announced that if the patent was valid, it had been infringed. This opinion shall be confined therefore to the issue of validity.

Defendant asserts that the patent in suit is invalid because of prior public use and no invention.

(1)

Prior Public Use.

On June 25, 1953, Thomas H. Shelley and William J. Gross, two of plaintiff's employees, filed a patent application in which they claimed that they had jointly invented a new and useful adhesive bandage.

Adhesive bandages had been on the market for more than 25 years prior thereto. However, practically all of such bandages, in the surgical dressing field, used crinoline, a heavily starched and dried gauze, as the facing material. These bandages were only moderately satisfactory because they lacked sufficient adhesive qualities. In other words, many of them would not stick properly when applied to the user's skin. The invention claims to have solved this problem by providing for instantaneous adhesion, or "quick-stick", through the use of a smooth, glossy, inert and easily removable facing which was placed in intimate contact with the adhesive mass. It was asserted that such a facing would impart to the underlying adhesive mass a smooth and glossy surface even when subjected to sterilization conditions.

Prior to any Patent Office action on the merits of the claims, they withdrew their application in favor of another joint application dated September 25, 1953, which covered the same claims but in greater detail.

On November 17, 1954, the Patent Office allowed five of applicants' claims as to method and ten as to composition.

On January 4, 1955, Gross alone filed a third patent application concerning the same basic claims. He asserted that he was the sole inventor and requested the Patent Office to make his sole application a continuation-in-part of the prior joint application.

Shelley and Gross both filed affidavits in which they stated that at the time they filed their earlier applications, they believed they were the joint inventors, but that they later discovered that the invention covered by the claims allowed in the September, 1953, application were not their joint invention, but the sole invention of Gross.

Shelley disclaimed any status as inventor, singly or jointly, in the allowed claims and requested that his name be stricken from the two prior joint applications. The Patent Office granted his request and also granted Gross' request that his sole application be treated as a proper continuation-in-part of the two earlier joint ones.

In the meantime, Bauer & Black, a firm active in the surgical dressing field, was also working in this area. A Johnson & Johnson inter-office memorandum dated March 13, 1953, a full three months prior to the first Gross and Shelley application, reported that Bauer & Black was testing its conventional adhesive strip bandage, "Curad", with a smooth facing. The memorandum contained information that Bauer & Black was conducting a marketing research survey in a Chicago grocery store to determine consumers' preference between its "Curad" with the old crinoline facing and one with a new smooth facing.

At least since 1948, plaintiff's research department has been perfecting a bandage with a smooth facing, and the 1953 memorandum recommended that immediate steps be taken to market the product. Shortly thereafter, another memorandum urged that a patent application be filed as quickly as possible.

The Bauer & Black market survey is the basis for defendant's first defense against the patent's validity—that of prior public use.

Specifically, defendant contends that Gross' effective filing date is January 4, 1955, and that the patent is invalid

because of the public use by Bauer & Black more than one year prior to the filing date. 35 U. S. C. § 102(b).[1]

Defendant asserts that Gross is not entitled to an effective filing date of June 25, 1953, for the reasons that (a) he failed to meet the statutory requirement of 35 U. S. C. § 120 that the earlier application and the continuation application be filed "by the same inventor"; and (b) the affidavits submitted by Gross and Shelley in support of their petition to declare Gross the sole inventor failed to meet the specific requirements set forth in Rule 45(b) of the Rules of Practice of the Patent Office.

At the oral argument at the conclusion of the testimony, counsel for defendant also contended that the 1955 application failed to meet the requirement of 35 U.S.C. § 120, in that the invention described therein was not disclosed in either of the 1953 applications. In his written brief, filed several months thereafter, this ground was not mentioned. On the basis of the undisputed facts, this contention is so clearly without merit that I shall regard it as having been abandoned.

The issue as to the necessity for having the same inventor file both the earlier application and the continuation-in-part application in order to take advantage of the earlier filing date was considered and decided adversely to defendant's contention in *In re Roberts*, D.C. Cir. 1920, 263 Fed. 646, 647. The court there framed the issue as follows:

> "... [W]here it appears that a joint application has been filed through mistake or inadvertence, and without fraudulent intent, ... [is] the sole inventor, one of the joint applicants, ... estopped from taking any advantage of that application?"

1. "A person shall be entitled to a patent unless ... (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States ..."

The Patent Office had held that the sole applicant was a different entity from the joint applicants, and hence the sole application could not be considered in any circumstance as a continuation of the old one. The Court of Appeals reversed the Patent Office decision stating that since there was identity of subject matter, there was no reason for not permitting the elimination of one of the joint applicants to whom credit mistakenly had been given for the invention. The court held that in view of the fact that the amendment was proper, the filing of what in effect was a duplicate application by the actual sole inventor should have been regarded as a continuation of the former application.

I agree with the reasoning of the court in the *Roberts* case and reject defendant's contention that the earlier applications and the continuation-in-part application of Gross were not filed by the same inventor.

Defendant next asserts that Gross is not entitled to the earlier filing date because the affidavits supporting Gross's application that he be declared the sole inventor failed to meet the requirement that the ultimate facts be verified by tangible evidence. Rule 45, Rules of Practice of the Patent Office.

The defendant's reliance on *Application of Strain*, C.C.P.A. 1951, 187 F. 2d 737, 741, is misplaced. In that case, the Court of Customs and Patent Appeals affirmed the decision of the trial examiner, who held that a continuation-in-part application was insufficient because the supporting affidavit failed to set forth any of the essential facts upon which the contentions of error and mistake in the filing of the original joint application were based.

There, the court merely had to find that there was substantial evidence to support the trial examiner's ruling. Here, where the Patent Office held that the affidavits were

sufficient, this court, to reverse, would have to find that the ruling was arbitrary and capricious and that the strong presumption that the Patent Office does not violate its own rules had been overcome. *Scovill Mfg. Co.* v. *Radio Corporation of America* (D.C. S.D. N.Y. 1935), 9 F. Supp. 239, 243.

In addition, even if there were illegalities or irregularities committed in the procedure leading up to the issuance of the patent, in the absence of fraud they may not be made the subject of a collateral attack by a defendant in an infringement suit. *Mahn* v. *Harwood*, 112 U. S. 354 (1884); *Wayne Mfg. Co.* v. *Coffield Motor Washer Co.*, 8 Cir. 1915, 227 Fed. 987, 991; *Bettis* v. *Patterson-Ballagh Corp.*, D.C. S.D. Cal. 1936, 16 F. Supp. 455, 463. This is precisely what defendant is attempting to do here.

I find that the plaintiff, as assignee of the Gross patent, is entitled to an effective filing date of June 25, 1953, and that the defense of prior public use is without merit.

(2)

No Invention.

Defendant contends that the patent in suit was anticipated by the prior art, does not disclose any patentable invention over the prior art, and the disclosure is a mere substitution of materials which does not amount to invention.

a.

Defendant asserts that the patent in suit is invalid because there are three patents[2] which disclose the inven-

2. (1) Bauff U. S. Patent No. 2,721,550, issued October 25, 1955, upon an application filed June 1, 1954, which was a continuation of an application filed March 21, 1950.

(2) Pronio U. S. Patent No. 2,702,772, issued February 22, 1955, upon an application filed December 20, 1951.

(3) Huerre U. S. Patent No. 2,728,687, issued December 27, 1955, upon an application filed September 17, 1952.

tion, applications for which were filed prior to the date of the Gross invention. 35 U.S.C. § 102(e).[3] Defendant asserts that this is true even assuming that Gross is entitled to an effective filing date of June 25, 1953.

To meet this defense, plaintiff has elected to prove that Gross is entitled to a pre-filing date of invention.

The evidence disclosed that on January 13, 1948, Gross requested plaintiff's manufacturing department to produce a small quantity of adhesive bandages. In July, 1948, an additional quantity of adhesive bandages was produced. Gross testified that the bandages in both lots had smooth continuous cellulose acetate facing members. He further testified that he found that the facing members of these experimental bandages were inert with respect to the adhesive mass and that in most instances the facings were in intimate contact with it; that the facing member had good releaseability and that the adhesive quality had been remarkably enhanced. Gross' testimony was corroborated by his assistant, Benjamin Blackford. A progress report prepared by Gross, dated August 31, 1948, corroborates the testimony of both Gross and Blackford. In addition, I have examined the experimental bandages in both lots, and find that they possess the qualities contained in the progress report and in the testimony of Gross and Blackford. There was no contrary evidence.

Although a party seeking to establish a pre-filing date of invention must assume a heavy burden and the court "must be persuaded with a certainty which is seldom demanded elsewhere; quite as absolute as in a criminal case . . ."; *United Shoe Machine Corp.* v. *Brooklyn Wood Heel Corp.*, 2 Cir. 1935, 77 F. 2d 263, 264; *Bearings Co. of*

3. "A person shall be entitled to a patent unless . . . (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent."

America v. *D. P. Harris Hdw. & Mfg. Co.*, 2 Cir. 1924, 299 Fed. 782; I find that the evidence adduced here meets that high standard and establishes an invention date of 1948.

Defendant nevertheless contends that Gross cannot make use of the 1948 date, on the ground that he subsequently abandoned the invention. There is no merit to this contention. The testimony clearly shows that the period from 1948 to 1953 was not a period of inaction as defendant asserts, but was one of continuous activity, primarily centered around Gross' efforts to overcome certain technical objections of plaintiff's merchandising department. In addition, even if the defense of abandonment had merit, it was neither pleaded in the answer nor noticed in writing at least 30 days before the trial as required by 35 U.S.C. § 282, and therefore is not entitled to consideration. This defense must likewise fail.

b.

In connection with defendant's contention that the Gross invention was disclosed by publications issued and patents granted more than one year prior to Gross' effective filing date, defendant first relies on Cederroth, an abandoned Swedish patent application. There is no basis for this reliance. Applications which do not eventuate in patents do not constitute prior publication and are not part of the prior art. *White Cap Co.* v. *Owens Illinois Glass Co.*, 6 Cir. 1953, 203 F. 2d 694, cert. denied 346 U. S. 876 (1953).

Defendant next relies on some Cederroth circulars and eight patents. In my view, the Cederroth circulars and six of the patents which defendant alleges are anticipatory[4]

4. (a) Peck U. S. Patent No. 2,432,541, granted December 16, 1947.
(b) Britton British Patent No. 616,511, granted January 21, 1949.

do not require individual treatment. For example, the circulars and several of the patents deal with various types of facing materials to cover or protect bandage pads, labels, vulcanized rubber and other tacky bodies, from dust, dirt, fraying and from adhering to one another prior to use. Not one of them shows any appreciation of the problem sought to be solved by Cross, nor do they point the way towards such solution.

The patent upon which defendant most heavily relies is Donaldson No. 2,450,083, a file wrapper reference. Donaldson discloses the use of a specially impregnated paper for the protection of adhesive sheets of tape "when stored or when wound onto a spool" as a substitute for gauze or crinoline. The paper is "impregnated with a synthetic resin binding the lint fibres on the surface of the paper to the base thereof . . ." so that when the paper is removed from the adhesive surface, there will be no adherence of any particles of one material upon the other.

The other patent upon which defendant strongly relies is Sander—German patent No. 679,267. In Sander, the gauze facing on a bandage is impregnated with polyvinyl or polyacrylic products, to prevent the loss of adhesive material from the bandage, when the facing is being removed. In other words, the impregnation is done to preserve the adhesive and prevent its destruction or decomposition.

The patent states that the "impregnation . . . results in a smoothing out of the gauze." Neither Donaldson nor

(c) Morgan U. S. Patent No. 2,484,045, granted October 11, 1949.

(d) Dahlquist U. S. Patent No. 2,532,011, granted November 28, 1950.

(e) Calvert U. S. Patent No. 2,541,498, granted February 13, 1951.

(f) Reese U. S. Patent No. 2,583,341, granted January 22, 1952.

Sander necessarily requires that the facing have a smooth and continuous surface—the central ingredient of the Gross invention.

The testimony at the trial showed that gauze, when dipped in accordance with the teaching of the Sander patent, was not smooth and continuous. To make a smooth surface, it would be necessary to coat the fabric four times, a procedure neither suggested nor taught by Sander.

The testimony also revealed that when Gross attempted to use a paper lining under the Donaldson patent, he met with failure because the bandages delaminated after sterilization.

However, even if the gauze facing and paper linings had smooth and continuous surfaces, neither of these two prior art patents would have anticipated Gross because neither was intended nor designed to accomplish the function of Gross, *Topliff* v. *Topliff*, 145 U. S. 156, 161 (1892); neither would have suggested the patented idea to a person skilled in the art unless he were examining it for that purpose, *Cold Metal Process Co.* v. *Carnegie-Illinois Steel Corp.*, 3 Cir. 1939, 108 F. 2d 322, 333, cert. denied 309 U. S. 665 (1940); and neither contained within its four corners, adequate directions for practicing the Gross invention, *Dewey and Almy Chemical Co.* v. *Mimex Co.*, 2 Cir. 1942, 124 F. 2d 986, 989.

None of the prior art references, considered either individually or collectively, disclosed the Gross invention. Smooth, continuous facings of plastic materials were known in the art, but their use was confined to the pursuit of other and different results, and there was a total unawareness that such a facing could be employed under the conditions outlined in Gross to achieve greater, quicker and more satisfactory adhesiveness. The differences between the Gross invention and the prior art were so significant that

it cannot be said that the invention would have been obvious to a person having ordinary skill in the art. In fact, the great amount of research in which the industry had engaged for a number of years to obtain more satisfactory adhesiveness, the great impact that plaintiff's bandage had on the market, and its phenomenal commercial success amply justify the conclusion that the result achieved by Gross was both surprising and unexpected. *Reiner* v. *I. Leon Co.*, 2 Cir. 1960, 285 F. 2d 501.

c.

Finally, defendant claims that Gross merely substituted smooth films of organic materials for crinoline on the bandage facings and that the substitution of a modern material with known characteristics for another material does not amount to invention.

The substitution of one material for another ordinarily does not amount to invention. *Hotchkiss* v. *Greenwood*, 52 U. S. 248 (1850); *Dewey and Almy Chemical Co.* v. *Mimex Co.*, supra. However, substitutions have uniformly been held inventive in those cases in which the substitution solved a significant problem which prior efforts have failed to handle satisfactorily. *Smith* v. *Goodyear Dental Vulcanite Co.*, 93 U. S. 486, 496 (1876); *Perma-Fit Shoulder Pad Co.* v. *Best Made etc.*, 2 Cir. 1955, 218 F. 2d 747, 751.

The fact that the new substituted material had properties well known to the trade or even to the general public, or the fact that the substitution does not involve discovery or utilization of an unknown or unexpected property of the material is of no significance. *George Frost Co.* v. *Cohn*, 2 Cir. 1902, 119 Fed. 505; *Carbide & Carbon Chemicals Corporation* v. *Coe*, D.C. Cir. 1938, 102 F. 2d 236; *United Shoe Machinery Corporation* v. *E. H. Ferree Co.*, 2 Cir. 1933, 64 F. 2d 101.

For many years prior to the Gross invention, the surgical dressing industry was confronted with many problems in connection with sterile adhesive bandages sold to the general public. Consumers frequently co aplained that the bandages failed to stick quickly or sufficiently when applied to the skin.

Numerous attempts were made to solve this problem by increasing the adhesive power of the mass. These attempts proved unsuccessful and often resulted in greater problems. Higher adhesive powers of the mass made the bandages adhere to the skin so tenaciously that their removal was painful and left a sticky deposit on the user's skin. This attempted solution created problems of processing and manufacture, particularly in connection with sterilization and the lateral flow of the mass beyond those areas intended to be covered with adhesive.

In spite of the fact that crinoline facings were almost universally employed, no one prior to Gross found that the solution to the problem lay in changing the facing from crinoline—a rough starched gauze—to a smooth, inert, organic material. This was probably due to the widespread belief that the rough surface in the adhesive mass caused by the crinoline facing afforded greater opportunity for adhesion to the skin.

Gross found the solution to the problem by replacing the crinoline facing with a facing member of an organic material containing the following characteristics when applied in the following manner:

(1) The film should present a surface that is smooth and continuous.

(2) The film should comprise an organic material that is substantially inert with respect to the mass used in forming the adhesive areas of the bandage.

(3) The film must be brought into and maintained in such intimate contact with its underlying adhesive coating that air pockets will be excluded and there will be imparted to the underlying adhesive coating the smooth surface of the film.

(4) The film should have good releasability.

The Gross invention was much more than a mere substitution of materials. It was the solution of a significant problem which prior efforts had failed to handle satisfactorily.

Conclusion.

I find that:

1. United States Patent No. 2,703,083 (the Gross patent which had been assigned to plaintiff) is valid as to the claims in suit, namely, claims 1, 3, 3, 9, 11 and 12.

2. The defendant has infringed such claims.

3. The defendant is enjoined from further acts of infringement.

4. Plaintiff is entitled to an accounting for profits and damages.

5. Plaintiff's claim for attorney fees is disallowed.

6. The defendant's counterclaim for a declaratory judgment of invalidity and non-infringement is dismissed on the merits.

The foregoing opinion will serve in place of findings of fact and conclusions of law, in accordance with Rule 52(a) of the Federal Rules of Civil Procedure.

Settle decree.

Gus J. Solomon,
United States District Judge.